CONTENTS

PART 1 JANUARY 2006

REVIEW ARTICLE

MCKAY, D. M. The beneficial helminth parasite? 1

SAMA, W., OWUSU-AGYEI, S., FELGER, I., DIETZ, K. and SMITH, T. Age and seasonal variation in the transition rates and detectability of *Plasmodium falciparum* malaria 13

MARTÍNEZ-DE LA PUENTE, J., MERINO, S., TOMÁS, G., MORENO, J., MORALES, J. and LOBATO, E. Are multiple gametocyte infections in malarial parasites an adaptation to ensure fertility? 23

HUGHES, J. M., WILLIAMS, R. H., MORLEY, E. K., COOK, D. A. N., TERRY, R. S., MURPHY, R. G., SMITH, J. E. and HIDE, G. The prevalence of *Neospora caninum* and co-infection with *Toxoplasma gondii* by PCR analysis in naturally occurring mammal populations 29

ELIAS, C. G. R., PEREIRA, F. M., SILVA, B. A., ALVIANO, C. S., SOARES, R. M. A. and SANTOS, A. L. S. Leishmanolysin (gp63 metallopeptidase)-like activity extracellularly released by *Herpetomonas samuelpessoai* 37

MOUTON, L., HENRI, H., BOULETREAU, M. and VAVRE, F. Effect of temperature on *Wolbachia* density and impact on cytoplasmic incompatibility 49

MARCET, P. L., DUFFY, T., CARDINAL, M. V., BURGOS, J. M., LAURICELLA, M. A., LEVIN, M. J., KITRON, U., GÜRTLER, R. E. and SCHIJMAN, A. G. PCR-based screening and lineage identification of *Trypanosoma cruzi* directly from faecal samples of triatomine bugs from northwestern Argentina 57

ZHU, Y., SI, J., HARN, D. A., XU, M., REN, J., YU, C., LIANG, Y., YIN, X., HE, W. and CAO, G. *Schistosoma japonicum* triose-phosphate isomerase plasmid DNA vaccine protects pigs against challenge infection 67

THORS, C., JANSSON, B., HELIN, H. and LINDER, E. Thomsen-Friedenreich oncofetal antigen in *Schistosoma mansoni*: localization and immunogenicity in experimental mouse infection 73

MATSUMOTO, J., MÜLLER, N., HEMPHILL, A., OKU, Y., KAMIYA, M. and GOTTSTEIN, B. 14-3-3- and II/3-10-gene expression as molecular markers to address viability and growth activity of *Echinococcus multilocularis* metacestodes 83

CUESTA, A., MUÑOZ, P., RODRÍGUEZ, A., SALINAS, L., SITJÀ-BOBADILLA, A., ÁLVAREZ-PELLITERO, P., ESTEBAN, M. A. and MESEGUER, J. Gilthead seabream (*Sparus aurata* L.) innate defence against the parasite *Enteromyxum leei* (Myxozoa) 95

KALBE, M. and KURTZ, J. Local differences in immunocompetence reflect resistance of sticklebacks against the eye fluke *Diplostomum pseudospathaceum* 105

LJUNGGREN, E. L., BERGSTRÖM, K., MORRISON, D. A. and MATTSSON, J. G. Characterization of an atypical antigen from *Sarcoptes scabiei* containing an MADF domain 117

ANENE, B. M., EZEOKONKWO, R. C., MMESIRIONYE, T. I., TETTEY, J. N. A., BROCK, J. M., BARRETT, M. P. and DE KONING, H. P. A diminazene-resistant strain of *Trypanosoma brucei brucei* isolated from a dog is cross-resistant to pentamidine in experimentally infected albino rats 127

POULIN, R. and LEFEBVRE, F. Alternative life-history and transmission strategies in a parasite: first come, first served? 135

POULIN, R. Global warming and temperature-mediated increases in cercarial emergence in trematode parasites 143

BOOK REVIEWS 153

PART 2 FEBRUARY 2006

REVIEW ARTICLE

HEDELER, C., PATON, N. W., BEHNKE, J. M., BRADLEY, J. E., HAMSHERE, M. G. and ELSE, K. J. A classification of tasks for the systematic study of immune response using functional genomics data 157

GRAY, E. M. and BRADLEY, T. J. Malarial infection in *Aedes aegypti*: effects on feeding, fecundity and metabolic rate 169

CUERVO, P., SABÓIA-VAHIA, L., COSTA SILVA-FILHO, F., FERNANDES, O., CUPOLILLO, E. and DE JESUS, J. B. A zymographic study of metalloprotease activities in extracts and extracellular secretions of *Leishmania (Viannia) braziliensis* strains 177

ABEL, J., SCHARES, G., ORZESZKO, K., GASSER, R. B. and ELLIS, J. T. *Hammondia* isolated from dogs and foxes are genetically distinct 187

HOLZER, A. S., SOMMERVILLE, C. and WOOTTEN, R. Molecular studies on the seasonal occurrence and development of five myxozoans in farmed *Salmo trutta* L. 193

TIMI, J. T. and LANFRANCHI, A. L. Size relationships between the parasitic copepod, *Lernanthropus cynoscicola*, and its fish host, *Cynoscion guatucupa* 207

RODRIGUES, A. C., PAIVA, F., CAMPANER, M., STEVENS, J. R., NOYES, H. A. and TEIXEIRA, M. M. G. Phylogeny of *Trypanosoma (Megatrypanum) theileri* and related trypanosomes reveals lineages of isolates associated with artiodactyl hosts diverging on SSU and ITS ribosomal sequences 215

GHEORGIU, C., MARCOGLIESE, D. J. and SCOTT, M. Concentration-dependent effects of waterborne zinc on population dynamics of *Gyrodactylus turnbulli* (Monogenea) on isolated guppies (*Poecilia reticulata*) 225

NUNN, M. A., BARTON, T. R., WANLESS, S., HAILS, R. S., HARRIS, M. F. and NUTTALL, P. A. Tick-borne Great Island Virus: (I) Identification of seabird host and evidence for co-feeding and viraemic transmission 233

NUNN, M. A., BARTON, T. R., WANLESS, S., HAILS, R. S., HARRIS, M. P. and NUTTALL, P. A. Tick-borne Great Island Virus: (II) Impact of age-related acquired immunity on transmission in a natural seabird host 241

BOURGUINAT, C., PION, S. D. S., KAMGNO, J., GARDON, J., GARDON-WENDEL, N., DUKE, B. O. L., PRICHARD, R. K. and BOUSSINESQ, M. Genetic polymorphism of the β-tubulin gene of *Onchocerca volvulus* in ivermectin naïve patients from Cameroon, and its relationship with fertility of the worms 255

EGAN, C. A., HOUSTON, K. M., ALCOCER, M. J. C., SOLOVYOVA, A., TATE, R., LOCHNIT, G., McINNES, I. B., HARNETT, M. M., GEYER, R., BYRON, O. and HARNETT, W. Lack of immunological cross-reactivity between parasite-derived and recombinant forms of ES-62, a secreted protein of *Acanthocheilonema viteae* 263

STEAR, M. J., ABUAGOB, O., BENOTHMAN, M., BISHOP, S. C., INNOCENT, G., KERR, A. and MITCHELL, S. Variation among faecal egg counts following natural nematode infection in Scottish Blackface lambs 275

SURES, B., LUTZ, I. and KLOAS, W. Effects of infection with *Anguillicola crassus* and simultaneous exposure with Cd and 3,3′,4,4′,5-pentachlorobiphenyl (PCB 126) on the levels of cortisol and glucose in European eel (*Anguilla anguilla*) 281

LEWIS, R., BEHNKE, J. M., STAFFORD, P. and HOLLAND, C. V. The development of a mouse model to explore resistance and susceptibility to early *Ascaris suum* infection 289

CORRIGENDUM 254

BOOK REVIEW 214

PART 3 MARCH 2006

REVIEW ARTICLE

SAJID, M. S., IQBAL, Z., MUHAMMAD, G. and IQBAL, M. U. Immunomodulatory effect of various anti-parasitics: a review 301

DÖŞKAYA, M., DEĞIRMENCI, A., ÇIÇEK, C., AK, M., KORKMAZ, M., GÜRÜZ, Y. and ÜNER, A. Behaviour of *Toxoplasma gondii* RH Ankara strain tachyzoites during continuous production in various cell lines 315

OLIVEIRA, F. A., KUSEL, J. R., RIBEIRO, F. and COELHO, P. M. Z. Responses of the surface membrane and excretory system of *Schistosoma mansoni* to damage and to treatment with praziquantel and other biomolecules 321

SILVA, L. K., LIU, S. and BLANTON, R. E. Microsatellite analysis of pooled *Schistosoma mansoni* DNA: an approach for studies of parasite populations 331

YADAV, M., DUBEY, M. L., GUPTA, I. and MALLA, N. Nitric oxide radicals in leucocytes and vaginal washes of *Trichomonas vaginalis*-infected symptomatic and asymptomatic women 339

DUSCHAK, V. G., BARBOZA, M., GARCÍA, G. A., LAMMEL, E. M., COUTO, A. S. and ISOLA, E. L. D. Novel cysteine proteinase in *Trypanosoma cruzi* metacyclogenesis 345

KARVONEN, A., CHENG, G.-H., SEPPÄLÄ, O. and VALTONEN, E. T. Intestinal distribution and fecundity of two species of *Diplostomum* parasites in definitive hosts 357

MUÑOZ, G., GRUTTER, A. S. and CRIBB, T. H. Endoparasite communities of five fish species (Labridae: Cheilininae) from Lizard Island: how important is the ecology and phylogeny of the hosts? 363

ARDELLI, B. F., GUERRIERO, S. B. and PRICHARD, R. K. Ivermectin imposes selection pressure on P-glycoprotein from *Onchocerca volvulus*: linkage disequilibrium and genotype diversity 375

JENKINS, E. J., VEITCH, A. M., KUTZ, S. J., HOBERG, E. P. and POLLEY, L. Climate change and the epidemiology of protostrongylid nematodes in northern ecosystems: *Parelaphostrongylus odocoilei* and *Protostrongylus stilesi* in Dall's sheep (*Ovis d. dalli*) 387

TROELL, K., TINGSTEDT, C. and HÖGLUND, J. Phenotypic characterization of *Haemonchus contortus*: a study of isolates from Sweden and Kenya in experimentally infected sheep 403

MARUYAMA, H., NISHIMAKI, A., TAKUMA, Y., KURIMOTO, M., SUZUKI, T., SAKATOKU, Y., ISHIKAWA, M. and OHTA, N. Successive changes in tissue migration capacity of developing larvae of an intestinal nematode, *Strongyloides venezuelensis* 411

TZAMALOUKAS, O., ATHANASIADOU, S., KYRIAZAKIS, I., HUNTLEY, J. F. and JACKSON, F. The effect of chicory (*Cichorium intybus*) and sulla (*Hedysarum coronarium*) on larval development and mucosal cell responses of growing lambs challenged with *Teladorsagia circumcincta* 419

WONG, W. L., BRENNAN, G. P., HALTON, D. W. and LIM, L. H. S. Fine structure of the anterior adhesive apparatus (head organs) of *Bravohollisia gussevi* Lim, 1995 (Monogenea: Ancyrocephalidae) 427

THOMPSON, R. C. A., BOXELL, A. C., RALSTON, B. J., CONSTANTINE, C. C., HOBBS, R. P., SHURY, T. and OLSON, M. E. Molecular and morphological characterization of *Echinococcus* in cervids from North America 439

BOOK REVIEWS 449

PART 4 APRIL 2006

GASSER, R. B., DE GRUIJTER, J. M. and POLDERMAN, A. M. Insights into the epidemiology and genetic make-up of *Oesophagostomum bifurcum* from human and non-human primates using molecular tools 453

LAAKKONEN, J., KALLIO, E. R., KALLIO-KOKKO, H., VAPALAHTI, O., VAHERI, A. and HENTTONEN, H. Is there an association of *Pneumocystis* infection with the presence of arena-, hanta-, and poxvirus antibodies in wild mice and shrews in Finland? 461

EL-MATBOULI, M. and SOLIMAN, H. Construction and screening of a cDNA library from the triactinomyxon spores of *Myxobolus cerebralis*, the causative agent of salmonid Whirling Diseases 467

FUTERMAN, P. H., LAYEN, S. J., KOTZEN, M. L., FRANZEN, C., KRAAIJEVELD, A. R. and GODFRAY, H. C. J. Fitness effects and transmission routes of a microsporidian parasite infecting *Drosophila* and its parasitoids 479

CHENIK, M., LAKHAL, S., BEN KHALEF, N., ZRIBI, L., LOUZIR, H. and DELLAGI, K. Approaches for the identification of potential excreted/secreted proteins of *Leishmania major* parasites 493

DE LIMA, A. R., MEDINA, R., UZCANGA, G. L., NORIS SUÁREZ, K., CONTRERAS, V. T., NAVARRO, M. C., ARTEAGA, R. and BUBIS, J. Tight binding between a pool of the heterodimeric α/β tubulin and protein kinase CK2 in *Trypanosoma cruzi* epimastigotes 511

ZIEM, J. B., OLSEN, A., MAGNUSSEN, P., HORTON, J., AGONGO, E., GESKUS, R. B. and POLDERMAN, A. M. Distribution and clustering of *Oesophagostomum bifurcum* and hookworm infections in Northern Ghana 525

CRAIG, H., WASTLING, J. M. and KNOX, D. P. A preliminary proteomic survey of the *in vitro* excretory/secretory products of fourth-stage larval and adult *Teladorsagia circumcincta* 535

BAHUAUD, D., MARTINEZ-ORTIZ DE MONTELLANO, C., CHAUVEAU, S., PREVOT, F., TORRES-ACOSTA, F., FOURASTE, I. and HOSTE, H. Effects of four tanniferous plant extracts on the *in vitro* exsheathment of third-stage larvae of parasitic nematodes 545

PARAMÁ, A., ARRANZ, J. A., ÁLVAREZ, M. F., SANMARTÍN, M. L. and LEIRO, J. Ultrastructure and phylogeny of *Philasterides dicentrarchi* (Ciliophora, Scuticociliatia) from farmed turbot in NW Spain 555

BULL, J. C., JEPSON, P. D., SSUNA, R. K., DEAVILLE, R., ALLCHIN, C. R., LAW, R. J. and FENTON, A. The relationship between polychlorinated biphenyls in blubber and levels of nematode infestations in harbour porpoises, *Phocoena phocoena* 565

SEPPÄLÄ, O., KARVONEN, A. and VALTONEN, E. T. Susceptibility of eye fluke-infected fish to predation by bird hosts 575

HRČKOVA, G., VELEBNÝ, S., DAXNEROVÁ, Z. and SOLÁR, P. Praziquantel and liposomized glucan-treatment modulated liver fibrogenesis and mastocytosis in mice infected with *Mesocestoides vogae* (*M. corti*, Cestoda) tetrathyridia 581

DETER, J., BERTHIER, K., CHAVAL, Y., COSSON, J. F., MORAND, S. and CHARBONNEL, N. Influence of geographical scale on the detection of density dependence in the host-parasite system, *Arvicola terrestris* and *Taenia taeniaeformis* 595

PART 5 MAY 2006

PAGANOTTI, G. M., PALLADINO, C., MODIANO, D., SIRIMA, B. S., RÅBERG, L., DIARRA, A., KONATÉ, A., COLUZZI, M., WALLIKER, D. and BABIKER, H. A. Genetic complexity and gametocyte production of *Plasmodium falciparum* in Fulani and Mossi communities in Burkina Faso 607

HASTINGS, I. M. Complex dynamics and stability of resistance to antimalarial drugs 615

REITEROVÁ, K., TOMASOVICOVÁ, O. and DUBINSKÝ, P. Influence of *Toxocara canis* infection during pregnancy on offspring resistance towards re-infection 625

KANAFANI, Z. A., SKOURY, A., ARAJ, G. F., EL-KHOURY, M., SAWAYA, R. A., ATWEH, S. F. and KANJ, S. S. Seroprevalence of toxocariasis in Lebanon: a pilot study 635

AGUIRRE-GARCÍA, M. M., ESCALONA-MONTAÑO, A. R., BAKALARA, N., PÉREZ-TORRES, A., GUTIÉRREZ-KOBEH, L. and BACKER, I. *Leishmania major*: detection of membrane-bound protein tyrosine phosphatase 641

PEACOCK, L., FERRIS, V., BAILEY, M. and GIBSON, W. Multiple effects of the lectin-inhibitory sugars D-glucosamine and N-acetyl-glucosamine on tsetse-trypanosome interactions 651

WU, X. Y., ZHU, X. Q., XIE, M. Q. and LI, A. X. The radiation of *Haliotrema* (Monogenea: Dactylogyridae: Ancyrocephalinae): molecular evidence and explanation inferred from LSU rDNA sequences 659

SCOTT, M. E. High transmission rates restore expression of genetically determined susceptibility of mice to nematode infections 669

STEPEK, G., LOWE, A. E., BUTTLE, D. J., DUCE, I. R. and BEHNKE, J. M. *In vitro* and *in vivo* anthelmintic efficacy of plant cysteine proteinases against the rodent gastrointestinal nematode, *Trichuris muris* 681

COTTEE, P. A., NISBET, A. J., ABS EL-OSTA, Y. C., WEBSTER, T. L. and GASSER, R. B. Construction of gender-enriched cDNA archives for adult *Oesophagostomum dentatum* by suppressive-subtractive hybridization and a microarray analysis of expressed sequence tags 691

THOMPSON, R. C. A., KAPEL, C. M. O., HOBBS, R. P. and DEPLAZES, P. Comparative development of *Echinococcus multilocularis* in its definitive hosts 709

MUÑOZ, G., MOUILLOT, D. and POULIN, R. Testing the niche apportionment hypothesis with parasite communities: is random assortment always the rule? 717

KUBE, S., KUBE, J. and BICK, A. A loss of fecundity in a population of mudsnails *Hydrobia ventrosa* caused by larval trematodes does not measurably affect host population equilibrium level 725

GALAKTIONOV, K. V., IRWIN, S. W. B. and SAVILLE, D. H. One of the most complex life-cycles among trematodes: a description of *Parvatrema margaritense* (Ching, 1982) n. comb. (Gymnophallidae) possessing parthenogenetic metacercariae 733

PART 6 JUNE 2006

VARALDI, J., PETIT, S., BOUTETREAU, M. and FLEURY, F. The virus infecting the parasitoid *Leptopilina boulardi* exerts a specific action on superparasitism behaviour 747

TINSLEY, M. C. and MAJERUS, M. E. N. A new male-killing parasitism: *Spiroplasma* bacteria infect the ladybird beetle *Anisosticta novemdecimpunctata* (Coleoptera: Coccinellidae) 757

TINSLEY, M. C., BLANFORD, S. and JIGGINS, F. M. Genetic variation in *Drosophila melanogaster* pathogen susceptibility 767

BORK, S., DAS, S., OKUBO, K., YOKOYAMA, N. and IGARASHI, I. Effects of protein kinase inhibitors on the *in vitro* growth of *Babesia bovis* 775

MORRIS, D. J., MOLNÁR, K., LONGSHAW, M. and ADAMS, A. Immunostaining of spores and plasmodia of disparate myxozoan genera with comments on the properties of the sporular mucus envelope 781

HAMILTON, C. M., STAFFORD, P., PINELLI, E. and HOLLAND, C. V. A murine model for cerebral toxocariasis: characterization of host susceptibility and behaviour 791

JOHNY, S., KANGINAKUDRU, S., MURALIRANGAN, M. C. and NAGARAJU, J. Morphological and molecular characterization of a new microsporidian (Protozoa: Microsporidia) isolated from *Spodoptera litura* (Fabricius) (Lepidoptera: Noctuidae) 803

TAUPIN, V., MÉTÉNIER, G., DELBAC, F., VIVARÉS, C. P. and PRENSIER, G. Expression of two cell wall proteins during the intracellular development of *Encephalitozoon cuniculi*: an immunocytochemical and *in situ* hybridization study with ultrathin frozen sections 815

AUDEMARD, C., RAGONE CALVO, L. M., PAYNTEN, K. T., REECE, K. S. and BURRESON, E. M. Real-time PCR investigation of parasite ecology: *in situ* determination of oyster parasite *Perkinsus marinus* transmission dynamics in lower Chesapeake Bay 827

PION, S. D. S., CLARKE, P., FILIPE, J. A. N., KAMGNO, J., GARDON, J., BASÁÑEZ, M.-G. and BOUSSINESQ, M. Co-infection with *Onchocerca volvulus* and *Loa loa* microfilariae in central Cameroon: are these two species interacting? 843

GARCÍA, G. A., ARNAIZ, M. R., LANCELLA, S. A., ESTEVA, M. I., AINCIART, N., RIARTE, A., GARAVAGLIA, P. A., FICHERA, L. E. and RUIZ, A. M. Immunological and pathological responses in BALB/C mice induced by genetic administration of Tc 13 Tul antigen of *Trypanosoma cruzi* 855

POTENZA, M., GALAT, A., MINNING, T. A., RUIZ, A. M., DURAN, R., TARLETON, R. L., MARÍN, M., FICHERA, L. E. and BÚA, J. Analysis of the *Trypanosoma cruzi* cyclophilin gene family and identification of Cyclosporin A binding proteins 867

MOUNSEY, K. E., HOLT, D. C., McCARTHY, J. and WALTON, S. F. Identification of ABC transporters in *Sarcoptes scabiei* 883

VERVAEKE, M., DAVIS, S., LEIRS, H. and VERHAGEN, R. Implications of increased susceptibility to predation for managing the sylvatic cycle of *Echinococcus multilocularis* 893